# MSc in Mathematics Prospectus 1996/97

The Open University

# MSc in Mathematics
# Prospectus
# 1996/97

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Dear Enquirer,

Thank you for your interest in the Open University MSc in Mathematics. We hope that our taught higher degree will meet your needs and expectations.

The postgraduate degree of MSc in Mathematics offers you an opportunity to study in depth a variety of advanced topics in both pure and applied mathematics, described in this prospectus.

The Open University's unrivalled experience in supported open learning means that we can offer you a flexible approach to learning that will allow you to fit your studies alongside your other professional and domestic commitments, and our tutoring arrangements mean that even if you change your job or move house your studies can continue uninterrupted. Since the University received its Royal Charter in 1969 more than two and a half million people have studied with us for degrees, for professional purposes or for personal development. Nearly one in ten of all first degrees in the UK is now awarded by the Open University, and its multimedia approach to learning has led to its recognition as the most successful innovation in adult education this century.

We look forward to receiving your application for our next study year, which begins in February 1997. The closing date for applications is 30 June 1996.

Yours sincerely,

**Dr D. Richards**

*MSc in Mathematics Programme Director*

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# The Master of Science in Mathematics degree

## The MSc in Mathematics

The MSc in Mathematics is designed for students who want to continue their mathematics studies by delving more deeply into particular aspects of pure and applied mathematics. We hope that the elements of the programme will be sufficiently varied to interest mathematically inclined scientists and engineers as well as mathematicians. Most courses are based on guided reading of one set textbook.

### Entry requirements

You should have or expect to gain in 1996 at least upper second-class honours in a mathematics degree or in a degree with a high mathematical content. In exceptional circumstances applicants without this qualification will be considered, although non-graduates will not normally be admitted.

We must emphasize that the courses are mathematically demanding, as you would expect at this level, and that is why a good first degree in mathematics is required. If you have not thoroughly mastered the essential elements of an undergraduate programme in mathematics you are most unlikely to succeed at postgraduate level.

Since most courses have only one tutor we cannot accept more than about twenty students for each. We expect to admit altogether about thirty new students in 1996.

### Structure of the degree

The degree is awarded when you have successfully completed six courses. You should normally complete the degree within six years at the most, progressing by at least one and not more than two courses each year. New students will be offered a place on one course only.

If you are unable to study in a particular year (because of a change of employment or personal circumstances) or want to break off your MSc work temporarily but remain in the programme, you can ask permission to suspend your studies. Each case will be considered individually.

With the exception of M829 (see page 9), the courses need not be studied in any particular order. You can choose the sequence that suits you best.

The study year for all MSc courses is from February to October.

## Open University study

The Open University's methods allow you to choose your time and place of study and, to a large extent, the pace at which you work. You can adapt your study pattern to meet the changing needs of your domestic and working life, and our tutoring arrangements mean that your studies are not interrupted even if you change your job or move house.

### Course materials

The specially designed material, which you will receive before you begin each course, includes course notes for the set book, to help you pace your reading, to offer further explanation where we feel it is necessary, to suggest exercises and give their solutions. There is also an assignment booklet and a specimen examination paper with solutions. You will need to buy the set book rather than borrow it, since constant reference will be required throughout the course. Copies of the set books for M823, M824, M826, M829, M830 and M832 can be purchased from:

Mr Nigel Vincent
Faculty of Mathematics and Computing
The Open University
Walton Hall
Milton Keynes
MK7 6AA
Tel. 01908 652025

### Tuition

Correspondence tuition is the main means of teaching in the Open University. Tutors, who for the MSc in Mathematics are usually members of the University's central academic staff, help you to understand and learn from the course by written comments on your assignments as well as by assessing them. These comments are likely to provide the most important advice on maintaining or improving your progress on the course. In the MSc in Mathematics programme the presenter of each course, who writes the course notes and sets the assignments and the examination, is also responsible for tuition. He or she will be available as your usual point of contact if you have questions or difficulties; there is an answering service twenty-four hours a day. The Mathematics and Computing Faculty staff tutors in each region (see Appendix 2) will also be able to offer advice or to direct enquiries to the Higher Degrees Office (address on page 28).

## Assessment

Your academic performance will be measured by both continuous assessment and a three-hour written examination. The continuous assessment consists of four assignments set at intervals during the course. These marks are combined with those awarded for the examination to calculate your final result.

## Credit for courses outside the programme

If you have gained passes in M860 (or PMT600) *Software engineering* and M861 (or PMT601) *Computer architecture and operating systems,* which are part of the Computing for Commerce and Industry programme, you can count them *together* as *one* of the six courses you need for the MSc in Mathematics. You can obtain details of the Computing for Commerce and Industry programme from any of our Regional Centres or the Central Enquiry Service (addresses are in Appendix 2).

# MSc courses available in 1997

The following courses will be presented in 1997:

M821 *Non-linear ordinary differential equations*

M823 *Analytic number theory I*

M824 *Matrix groups*

M826 *Functional analysis*

M827 *Applicable differential geometry*

M828 *Applied complex variables*

* M829 *Analytic number theory II*

** M830 *Introduction to dynamic programming*

M832 *Approximation theory*

* Not available to new students registering to begin study in 1997

** This course may be presented for the last time in 1997

We shall continue to offer as many of the current courses as possible, but because staff may not be available to present them and set books may be out of print, we cannot guarantee the continuance of any course. In 1998 we hope to introduce a new course (M833) on advanced mathematical methods, using a computer-assisted algebra package.

# M821
# Non-linear ordinary differential equations

**Fee £199**

Non-linear ordinary differential equations arise in a wide variety of circumstances: a simple pendulum, oscillations in electrical circuits, oscillations of mechanical structures, molecular vibrations, the motion of particles in accelerators, planetary motion, the effects of strong electromagnetic fields of atoms and molecules. So this course should be of particular interest to scientists and engineers.

The course is based on the book *Non Linear Ordinary Differential Equations* by D. W. Jordan and P. Smith (1987, Oxford University Press, second edition). It is an introduction to some of the basic theory and to the simpler approximation schemes. It deals mainly with systems that have two degrees of freedom, and it can be divided into three parts. First, the geometric aspects of the two-dimensional phase space are discussed; we show why the fixed points are important and how they can be classified, and the notion of a limit cycle is introduced. Then we develop schemes by which the solutions of autonomous and non-autonomous equations can be approximated, and so begin to understand how the solutions behave. In this section there is some emphasis on periodically forced non-linear oscillators and on non-linear oscillators with periodically time varying parameters leading to parametric resonances. Finally, the stability of these solutions is discussed and various tests for stability are obtained.

### Assumed knowledge

You should have a good degree in mathematics, theoretical physics or engineering. You should have taken a good first course in calculus and have a sound knowledge of the theory of ordinary linear differential equations with constant coefficients; an adequate preparation would be the Open University undergraduate-level courses MST204 *Mathematical models and methods* and M203 *Introduction to pure mathematics* (or the discontinued courses M201 and M231).

# M823
# Analytic number theory I
# M829
# Analytic number theory II

**Fee £199 (M823)**
**£199 (M829)**

Number theory has its roots in ancient history. The Greeks were the first to classify the integers and it is to them that the first systematic study of the properties of the numbers is attributed. But after about 250 AD the subject stagnated until the seventeenth century. Since then there has been intensive development using ideas from many branches of mathematics. The field of number theory is now vast and many of the problems in it are difficult to understand. And, in spite of the maturity of the subject, many problems that are easy to state and understand still exist, for example:

- Is there an even number > 2 that is not the sum of two primes?
- Are there infinitely many 'twin primes' (primes differing by 2) such as (3, 5) or (101, 103)?
- Are there infinitely many primes of the form of $n^2 + 1$?
- Does there always exist a prime between $n^2$ and $(n + 1)^2$ for every integer $n \geq 1$?

In these courses we study number theory using techniques from analysis, in particular the convergence of series and the calculus of residues. Among the results proved are:

- Dirichlet's theorem on primes in an arithmetical progression, which states that there are infinitely many primes in a progression such as 1, 5, 9, 13,17...
- The law of quadratic reciprocity, which compares the solubility of the congruences $x^2 = p(\text{mod } q)$ and $x^2 = q(\text{mod } p)$, where p and q are primes.
- The prime number theorem, which estimates the number of primes up to a given value x.

These courses are based on selected readings of the book *Introduction to Analytic Number Theory* by T. M. Apostol (1986, third edition, Springer-Verlag; available from the Faculty, see page 7). The first course, M823, covers most of the material in the first seven chapters and part of chapter nine. The second course, M829, is based on chapter eight, the rest of chapter nine and most of chapters ten to fourteen. M829 is not available to new students registering to begin study in 1997.

### Assumed knowledge

You should have taken good first courses in real analysis and complex analysis. An adequate preparation would be the Open University undergraduate-level courses M203 *Introduction to pure mathematics* and M337 *Complex analysis* (or the discontinued courses M231 and M332). A knowledge of elementary number theory as given, for example, in M381 *Number theory and mathematical logic* (or the discontinued courses M382 or M383) would be an advantage but is not necessary. You must take M823 before you attempt M829.

## M824
## Matrix groups

### Fee £199

Lie groups is a subject that finds application in many branches of modern physics, and this course gives an elementary introduction to it. For example, in particle physics, the discovery of the Omega Minus is due to the description of particles in terms of a Lie group. Similarly, in relativity, quantum mechanics and classical mechanics, Lie groups make their appearance. This subject is also an important topic of pure mathematics, and so occupies a central position in modern science. The present course confines itself to the study of some sets of matrices that form groups (under matrix multiplication), and it should be accessible to students who have studied matrices and concepts from analysis such as continuity.

The course is based on the book *Matrix Groups* by M. L. Curtis (Springer-Verlag). Paperback copies are available from the Faculty (see page 7); you should buy the second edition published in 1984. We begin with a discussion of general linear groups (groups of matrices), including orthogonal groups (distance-preserving transformations in Euclidean space) and homomorphisms between them. Maximal tori (corresponding to subgroups of diagonal matrices) are examined, and the course concludes with an introduction to Lie groups. These represent a generalization of the matrix group idea which is the backbone of this course.

### Assumed knowledge

A first course in matrix algebra together with basic analysis (obtainable from the Open University undergraduate-level course M203 *Introduction to pure mathematics*, or the discontinued course M231) is necessary. It would also be beneficial to have studied the discontinued courses M382, M384 or M386.

## M826
## Functional analysis

### Fee £199

One of the characteristics of twentieth-century mathematics is the emphasis placed on classes of functions as a whole, rather than special properties of individual functions. Functions are considered as elements of a set. In a natural way, these sets can usually be given the additional structure of a linear space and a topological space. The interplay of these two structures is what gives the subject its characteristic flavour.

Along with the set of functions, it is useful to consider sets of mappings from the set into various other sets. In particular, linear mappings onto the set itself (operators) and into the complex numbers (linear functionals) are important.

This course does not consider any of the many applications of the theory, which include approximations, optimization, classical and quantum mechanics, statistical mechanics, infinite group representations and harmonic analysis, partial differential equations.

The course is based on the set book *Elements of Functional Analysis* by I. J. Maddox, published by Cambridge University Press (second edition, 1988), available in both soft and hard covers (see page 7). We follow this text chapter by chapter, omitting the last one.

### Assumed knowledge

You must have a *good* working knowledge of the following: convergence, continuity, complex functions and Cauchy's theorem, elementary set theory and mappings, topological spaces, particularly metric spaces, compactness, vector spaces and linear maps between them. An adequate preparation would be the Open University undergraduate-level courses M203 *Introduction to pure mathematics* and M337 *Complex analysis* (or the discontinued courses M332 and M386).

## M827
## Applicable differential geometry

### Fee £199

Differential geometry is an amalgam of ideas from calculus and from geometry. It could be described as the study of geometrical aspects of calculus, especially vector calculus: vector fields, gradients, line and surface integrals and differential equations are all examples of topics that benefit from geometrical investigation. Equally, differential geometry could be described as the study of those topics in geometry to which the calculus applies, such as the ideas of parallelism, curvature and isometry in smooth surfaces and their higher dimensional generalizations.

As a discipline in pure mathematics, differential geometry has a history that dates back at least as far as Euler. But a particular stimulus to its growth in the present century was Einstein's theory of general relativity, in which the key idea is the interpretation of gravity as a manifestation of the curvature of space-time. Nowadays differential geometry has an important role in the mathematical formulation of physical theories in the non-quantum domain; differential geometric ideas even lead to a better understanding of the process of quantization of classical mechanical systems.

The course has *'Applicable'* in its title because it concentrates on topics in differential geometry that have proved useful in applications. But it is not a course in the applications themselves, so it should appeal equally to students interested in pure and in applied mathematics. It is based on a book with the same title by M. Crampin and F. A. E. Pirani, published by Cambridge University Press, 1986.

### Assumed knowledge

You must have a working knowledge of calculus, including basic vector calculus; matrices; and the elements of group theory. An adequate coverage of these topics is given in the Open University undergraduate-level courses MST204 *Mathematical models and methods* and M203 *Introduction to pure mathematics* (or the discontinued courses M201 and M231). If you have studied the theory of surfaces (M334), electromagnetism (SMT356 or SM352) or general relativity (S354) you should find that this course illuminates those topics, but they are not essential prerequisites. Needless to say, the course is mathematically demanding so a good performance in honours-level mathematics (for Open University graduates passes at Grade 1 or 2 in three or four mathematics courses at Level 3) is necessary.

## M828
## Applied complex variables

### Fee £199

Complex variable theory pervades a wide variety of important subjects, and this course teaches some topics that are of use in the theoretical sciences and are of interest in their own right. The course deals with subjects that seem to be a natural outgrowth of the study of analytical functions of one complex variable, for example potential theory, the theory of ordinary linear differential equations, Fourier and Laplace transforms and asymptotic expansions.

Because the topics covered are used routinely in the sciences, we hope that this course will appeal to scientists and engineers as well as mathematicians.

The course is based on the set book *Applied Complex Variables* by J. W. Dettman, reprinted by Dover, 1984.

### Assumed knowledge

You should have taken good first courses in real analysis and complex analysis. An adequate preparation would be the Open University undergraduate-level courses M203 *Introduction to pure mathematics* and M337 *Complex analysis* (or the discontinued courses M231 and M332). Part I of the set book covers the prerequisite material, and this is a very useful feature of the book.

## M830
## Introduction to dynamic programming

### Fee £199

Dynamic programming (DP) is a technique of optimization based on Bellman's principle of optimality. It is particularly useful when applied to problems that can be regarded as comprising distinct stages, as long as decisions taken at the later stages do not affect the performance of earlier stages. The method is ideally suited to problems for which the n-dimensional optimization problem can be transformed into n one-dimensional optimization problems.

The principle of optimality that justifies such transformation was first enunciated by Bellman and can be stated in a simplified form as 'every optimal policy consists only of optimal sub-policies'. It is amazing that such a seemingly innocuous principle gives access to the solution of problems as diverse as allocation, scheduling, control theory and calculus of variations.

This course is based on the book *Introduction to Dynamic Programming* by L. Cooper and M. W. Cooper (Pergamon Press, 1981; available from the Faculty, see page 7). The theory is introduced through simple problems. Once the method has been explained and justified it is applied to more complicated problems involving various types of constraint.

Further, the method is applied to multidimensional problems that require much more numerical computation. Finally, we consider the application of dynamic programming to some variational problems that arise in practical applications and for which it is not possible to solve the Euler-Lagrange equations analytically.

In general, various DP techniques are presented and illustrated by worked examples and problems. The selection of examples for this course has been made so as to avoid the use of a computer, but you will need a calculator.

### Assumed knowledge

You should have taken a good first course in calculus and vector spaces. An adequate preparation would be the Open University undergraduate-level course MST204 *Mathematical models and methods* (or the discontinued course M201). Other necessary terminology is defined in the course. Elementary aspects of set theory are taken for granted.

## M832
## Approximation theory

### Fee £199

Approximation theory is concerned with the problem of approximating functions of a given class using functions from another, usually more elementary, class. A simple example is the problem of approximating a function such as $e^x$ by means of polynomial functions. The efficient solution of such problems is of great importance for computing and there has been a correspondingly vast increase in research devoted to such applications. This course gives a general introduction to the mathematical theory that lies behind many approximation methods in common use. To appreciate this theory it is necessary to work quite a number of numerical problems, so you will need a scientific calculator.

The course is based on the book *Approximation Theory and Methods* by M. J. D. Powell (Cambridge University Press, 1981; available from the Faculty, see page 7). A selection of chapters, about two-thirds of the book, is covered in detail.

### Assumed knowledge

You should have a good knowledge of real analysis and linear algebra, and some familiarity with metric spaces. An adequate preparation would be the Open University undergraduate-level courses MST204 *Mathematical models and methods* and M203 *Introduction to pure mathematics* (or the discontinued courses M201 and M231, and option 3 of M335 *Studies in pure mathematics*). No explicit use is made of the theory of complex variables but a knowledge of this subject, as in the Open University course M337 *Complex analysis* (or the discontinued course M332), would be useful since it has many techniques in common with approximation theory.

# Becoming a student

## Joining the University

### Entry requirements

To register for the MSc in Mathematics you should normally have a first-class or good second-class honours degree (please see page 6 for full information).

### Other study commitments

You may not study Open University courses that would lead to the award of more than 120 points in any twelve-month period.

### Residence

The University welcomes applications from residents in most parts of the European Union and in Gibraltar, Slovenia and Switzerland. If you intend to study outside the United Kingdom you are advised to ask the appropriate Regional Centre (see Appendix 2), before you apply, about the facilities that will be available. Once you have registered, you are expected to remain in residence in the European Union (or other European country in which we permit registration) throughout your studies. If you register for the MSc in Mathematics and later move outside the EU, you may be able to continue your studies using an EU forwarding address. Please consult you Regional Centre if you want advice about this. Approval will depend on the facilities that would be available to you and on your progress in the programme.

### Language

The language used for instruction, assessment and administration will be English, and your spoken and written English must be of an adequate standard for postgraduate study. Your nearest Regional Centre will be able to give you advice if you need it. If you are outside the UK, we may be able to put you in touch with an OU Co-ordinator who can help.

### Equal opportunities

The Open University's intention is to create conditions in which students and staff are treated solely on the basis of their merits, abilities and potential, regardless of gender, colour, ethnic or national origin, age, socio-economic background, disability, religious or political beliefs, family circumstance, sexual orientation or other irrelevant distinction. The University has an action plan to implement this policy.

### If you have a disability

Experience has shown that the Open University's multimedia system of learning, with its combination of close personal support and distance-based methods, is more accessible to disabled people than traditional forms of study. The University's policy is to encourage and enable disabled people to participate fully in every aspect of University study, and over the years we have built up a range of special teaching and support services (some provided in conjunction with national charities such as the RNIB and RNID) that meet the needs of most students.

The services we can offer are extensive and include audio-cassette recordings of printed course material, loan of various kinds of equipment, and examinations at home with extra time and rest breaks. Full information is given in our booklet *Meeting Your Needs,* available from our Regional Centres or by answering question 15 on the reservation form.

Although we make every effort to enable you to study our courses successfully, it would be wrong to claim that all are equally accessible. Some present special difficulties for people who have certain types of disability, so you will need to read the course descriptions carefully and consult one of our advisory staff (see below) before deciding which courses to take. Some services, particularly those to do with the provision of special equipment, are at the moment available only to students resident in the United Kingdom. *Meeting Your Needs* will tell you more about this.

Since it may take time to consider your needs and set up the services you require, you should make your reservation as early in the reservation period as possible.

### Help and advice before you apply

We have advisory staff in our Regional Centres and OU Co-ordinators in other parts of Europe who will help with questions that you would like to discuss. We can offer advice about such matters as choosing courses, preparation, study arrangements or difficulties, tutorial support and financial assistance. If you have a query, however small, please get in touch as soon as possible so that you can be fully informed before you apply and any help you need can be arranged before you commit yourself. You will find addresses and telephone numbers at the end of this booklet.

# Study dates, application and registration

## Study dates

### 1996

| | |
|---|---|
| 30 June | Closing date for reservations |
| July – Sept | Offers of registration |

### 1997

| | |
|---|---|
| Feb | Course begins |
| May | Invitation to reserve course(s) for 1998 |
| Oct | Examinations |
| Dec – Jan | Course results |

## Reserving a place

You become a student in two steps. The first is to return the reservation and supplementary information forms on pages 17-20. There is no charge for making a reservation.

## Registration

Using the information you have given on the supplementary information form, the MSc in Mathematics Programme Board will offer places to applicants whom it considers to be best qualified and prepared, perhaps also taking account of subject specialization and relevant experience. You will be offered only one course in your first year but you may take more than one in your second and subsequent years.

If we can offer you a place, we will send you a registration pack. This will include all the information you need to complete registration: information about support services; how to pay fees; notes to help you to approach your employer for financial support; how to set about equipping yourself with a computer, if you need it; and much more. The second step in becoming a student is to return the registration form from the pack with your payment or commitment to pay. This will confirm your reservation, securing your place on the course.

## Registration for further courses

Once you are registered for the MSc in Mathematics, you will be able to choose further courses from the programme each year. Your registration will continue if you have made satisfactory progress and places on a course of your choice are available.

# Fees

## Course fees

The fees shown in the brochure are for 1997 only and will be reviewed annually. The University reserves the right to change fees at any time without notice, although every effort will be made to warn you of any increase.

## Payment

You do not have to pay anything when you reserve a place: your commitment to pay fees begins only when you confirm your registration. You will be given time, before you make that decision, to seek the advice of one of our regional advisory staff and to explore the possibilities of obtaining financial support (see *Help with fees* below). When you register you will be able to choose how to pay your fees:

- You can make full payment (which can include an undertaking from a sponsor to pay all or part of your fee on your behalf).
- You can charge your fees to an Open University Student Budget Account and pay off your account in instalments during your course. You will be charged interest but we will keep it as low as possible (the present interest rate is 7.2 per cent). No repayment or interest will be due before your course begins.
- You can charge your fees to an Open University Student Budget Account but pay off your account in full before the course begins. If you do this you will not incur any interest charges.

**Example of payment by instalments through an Open University Student Budget Account**

| | |
|---|---|
| Fee for a 30-point MSc in Maths course | £199 |
| 7 monthly payments of | £26 |
| Final month's payment | £22.08 |
| Total cost | £204.08 |
| Annual percentage rate (APR) | 7.2% |

You will find details of the Open University Student Budget Account in your registration pack. If you want information before you reserve a place, please ask your Regional Centre. Regional Centre staff can also obtain a written quotation for you if you give details of your requirements.

### Sponsorship

Many employers recognize the value of their employees' study with the Open University by paying some or all of the course fees. You must decide for yourself whether to approach your employer for sponsorship, or any other kind of assistance, but we will help you by sending you notes and a sponsorship form with your registration pack.

### Training grants and loans

If you want more information about these and other possible sources of support you can obtain a leaflet, *Financial Support for OU Study*, from any of our Regional Centres.

### Local education authority grants (UK students only)

Open University students are not automatically entitled to grants from local education authorities because, unlike full-time students, part-time students in higher education are expected to pay their own way. Some local authorities do offer help but it is at their discretion and subject to their own financial position.

### Financial support for teachers in Northern Ireland

Teachers in full-time permanent posts in Northern Ireland can ask for an application form for financial assistance from the School Support Branch, Department of Education for Northern Ireland, Rathgael House, Balloo Road, Bangor, County Down, BT19 2PR (telephone 01247 279000).

You should send the completed form, PTC1, to The Open University Regional Centre, 40 University Road, Belfast BT7 1SU. Since financial support for a taught higher degree can be given only if you have at least two year's teaching experience, please state on the form your expected length of teaching service up to 31 January 1997. The PTC1 form should be submitted by early September; the exact date can be obtained from the DENI circular *Open University Degree and Associate Student Courses for Teachers* or by asking DENI's School Support Branch.

*Submission of a PTC1 form does not constitute an application to the University.*

## The University's regulations

If you reserve a place on an MSc in Mathematics course the registration pack we send will tell you more about your contract with the Open University. Then, when you become a student, we will send you more detailed information about studying in the MSc in Mathematics programme. If you have any questions now, please ask.

# Completing the reservation form

The following notes will help you to complete the reservation form correctly. You should then send both that and the supplementary information form to the Higher Degrees Office (address on page 28).

## Notes on some of the questions

### Your personal details

Some of these questions will help us to trace any record we have created for you before. They also ensure that the record we create now will enable us to identify you in the future.

### Note 1 Personal identifier

If you have studied with the University before you will already have a personal identifier (e.g. M1234567). If you are new to the University, we give you one when you first make an enquiry. Please help us by quoting it on all correspondence.

### Note 2 Address

If you live in the United Kingdom it is important to enter your postcode. BFPO codes should also be put in the postcode box.

The address you give here is the one we will use for correspondence. When you complete registration you can give a second address to which we can send bulky course materials.

### Note 3 Telephone numbers

Please give the full code and number. If you live outside the UK include your international dialling code.

### Your study details

### Note 4 Study centre and region code

Your choice of study centres is listed on page 24.

### Note 5 Choice of courses

**Courses**

The codes for courses in the brochure are:

M821 *Non-linear ordinary differential equations*

M823 *Analytic number theory I*

M824 *Matrix groups*

M826 *Functional analysis*

M827 *Applicable differential geometry*

M828 *Applied complex variables*

M829 *Analytic number theory II**

M830 *Introduction to dynamic programming*

M832 *Approximation theory*

*Not available to new students registering in 1997

### Starting dates

The starting date for all the courses in this brochure is February 1997.

### Awards

The code for the MSc in Mathematics degree is F04.

### Advice and assistance

### Note 6 Financial help from the OU

The OU cannot offer financial help to students on MSc in Mathematics courses, so please do not answer questions 13a and 13b. Information about other possible sources of financial help is given on page 15.

### Note 7 Credit for study you have already completed

This question does not apply to the MSc in Mathematics.

### Note 8 Study concerns

We will do our best to help you if you are concerned about your ability to study. You might want to mention things like:

Having little or no recent experience of study.

Not being certain about the requirements for study at postgraduate level.

Work problems, including shift patterns or travel away from home.

Language, if English is not your first language.

Financial or other personal difficulties.

### Data protection

### Note 9

The paragraph headed *Marketing and fund-raising* in the information about data protection below explains what is covered by this question.

The Open University

Office use

# YOUR RESERVATION FORM

Please write clearly in block capitals. No payment is due at this stage. **You will need to refer to your brochure and, in particular, to the notes in the *Becoming a student* section, to answer some of the questions.** If alternatives are given, delete whichever is inappropriate.

## Your personal details

1 Surname/family name

2 Forenames in full

3 Title (Mr, Ms, Mrs, Miss etc.) Male or female M/F

4 Date of birth (day, month, year)

5 Have you studied with the OU before? Yes/No

6 OU personal identifier, if you have one and can remember it. (See note 1)

7 Address for correspondence (See note 2)

Postcode or BFPO number

Country, if not UK

8 Telephone code and number, if we may use it. (See note 3)

Day

Evening

9 Fax number if you have one

10 E-mail address if you have one

## Your study details

11 Enter the code of your preferred study centre (See note 4 and Table 1) and its region

12 Enter the code of the course(s) you want to study, your preferred starting date if there is a choice, and the code of any award(s) you want the course to count towards. (See note 5)

| | Title | Code | Starting date | Award code(s) |
|---|---|---|---|---|
| Course | | | | |
| Course | | | | |
| Course | | | | |
| Course | | | | |

## Advice and assistance

As part of our supported open-learning service we offer advice and assistance so that you can get the most benefit from your studies. Your answers to these questions will help us to help you. They will not affect your chance of being offered a place.

13a Are you automatically eligible for an OU financial award, if money is available? (See note 6) Yes/No

13b If you answered 'no', do you want to apply for an OU financial award based on our assessment of your household income? (See note 6) Yes/No

14 Enter the code for any award(s) for which you want details about transferring credit. (See note 7)

15a Have you a disability or any health problem that might affect your studies? Yes/No

15b If you answered 'yes' we will send you a booklet describing our special services. Do you need the audio-cassette version of this booklet? Yes/No

16 Are you registered disabled? Yes/No

17a Have you any other concerns about your ability to study, or questions about preparation? (See note 8) Yes/No

17b If you answered 'yes', say briefly what these are. We may want to send you more information or contact you.

## Statistical information

The Open University, like all other UK universities, is required to make statistical returns about its students. Please answer these questions; they will not affect your chance of being offered a place.

18 Which of our codes best indicates your highest level of education? (See Table 2)

19 Which of our codes best indicates your ethnic origin? (See Table 3)

20 What is your nationality?

21 Which of our codes best describes your present occupation? (See Table 4)

## Data protection

22 Would you like us to send you information about other products and services we think might interest you? (See note 9)

**Send your completed form to the Regional Centre you have chosen in question 11. You will find the address in your brochure.**

The Open University

Office use

# SUPPLEMENTARY INFORMATION

Complete this form only if you are reserving a place on a course or award for which there are entry requirements. Write clearly in block capitals and be sure to sign it. Send two copies of any separate sheets or enclosures. The form should be returned with your completed reservation form to the Higher Degrees Office.

## Your personal details

1 Surname/family name

2 Forenames in full

3 Date of birth (day, month, year)

4 OU personal identifier, if you have one and can remember it.

## Entry requirements

Please read the *Becoming a student* section of your brochure about entry requirements before you complete this part of the form. You will also need to refer to *Becoming a student* for explanations and codes.

5 Enter the code of the award for which you want to register.

6 *Your entry qualification (See note 1)*

Give the abbreviated title of your entry qualification (e.g. BA, BSc, MSc)

If this qualification is a degree, how was it classified? (1, 2, 2i, 2ii, 3, Pass)

Date of award (month/year)

7 *Awarding body (See note 2)*

Name of institution or awarding body

Address of institution or awarding body (unless OU or CNAA)

Postcode

Country

8 If your name has changed, give the name in which the award was made. (See note 3)

Title | Initials | Surname/family name

9 If your entry qualification was awarded by the OU, give the code. (See note 4)

10 Main subject(s) studied. (Not necessary if your entry qualification was awarded by the OU or for MBA applicants.)

## OU study

11 If you have already passed OU courses that you want to count towards the award you are now registering for, list them here. (See note 5)

12 List here any other OU courses, not mentioned in 11, that you have taken or are taking.

| Year | Course | Result |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

| Year | Course | Result |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

13 Give a brief history of relevant aspects of your career, using only the space provided.
Do not attach a separate curriculum vitae.

| Dates | Your position | Name and business of your employer |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

14 Additional information. Please read the notes in *Becoming a student* before you complete this question.
Continue on a separate sheet if necessary, but do not attach a separate curriculum vitae. (See note 6)

The University reserves the right to cancel any registration if it was based on information that proves to be untrue or misleading.

Signature

Date

## Completing the supplementary information form

This form asks you for information that we need in order to decide whether you are qualified to enter the MSc in Mathematics programme.

### Notes on some of the questions

### Personal details

We need you to repeat some of the information you have given on the reservation form so that we can still identify the forms if they become separated.

### Entry requirements

These questions will be used to confirm your qualifications. Please give details of the highest appropriate qualification – which you either hold or are now studying for – that satisfies the entrance requirements for the MSc in Mathematics.

**Note 1**

Enter details of *one* qualification only. Other qualifications may be listed on a separate sheet. *If you obtained your qualification outside the United Kingdom please give its full name in the original language, not its equivalent.*

**Note 2**

Please complete these questions in full, unless your qualification was awarded by the Open University. They will be used to request confirmation from the awarding institution. If your qualification was awarded by the CNAA, enter CNAA followed by the name of the institution at which you studied (e.g. CNAA – Bristol Polytechnic) and leave the rest blank. If you have a professional qualification, please give the name and address of the awarding body.

**Note 3**

Please answer this question whether your qualification was awarded by the Open University or by another institution.

**Note 4**

Complete this question only if your qualification was awarded by the Open University. Use one of the following codes:
BA Bachelor of Arts degree
BSc Bachelor of Science degree

**Note 5**

You may have already taken M431 *The Lebesgue Integral*, M860 or M861 (see page 7) as an undergraduate or associate student of the University. If these courses have not already been counted as part of your entry qualification you may be able to count them towards the MSc in Mathematics. Please give the codes of any of these courses that you have completed, so that we can add them to your award record if appropriate.

**Note 6**

This question is to give the MSc in Mathematics Programme Board more detailed information with which to assess applicants, so it is important to complete it as fully as possible. You may give:

- Details of courses you have already studied (excluding Open University courses you have mentioned elsewhere) and the results you obtained.
- Evidence of your ability to study at postgraduate level. This is particularly important if your formal qualifications do not meet the normal entry requirements for this degree. You could mention, for example, relevant courses you have taken, positions of responsibility, or publications or research work in which you have taken part. If you do not possess the normal qualifications you need to persuade the Programme Board that you will be able to cope with your studies.
- Any additional academic or professional qualifications that you have not mentioned elsewhere.

## Where to send the form

Send your reservation and supplementary information forms to the Higher Degrees Office; you will find the address on page 28. Applications from outside the UK should also go direct to the appropriate Regional Centre, *not* to one of the Open University Co-ordinators.

### Payment

Please do *not* send any payment at this stage.

### Extra forms

If you need extra forms, please ask one of our Regional Centres.

### Change of address

If you change your address after sending in your reservation form, please let us know as soon as possible.

# Data protection

## Your computer record

As soon as you contact the University we create a computer record in your name. Information that we then collect, including information that you give us on reservation and registration forms, is added to that record. You have the right, given by the Data Protection Act of 1984, to obtain a print-out of your computer record at any time. We charge a fee of £8 for each request. You should address your request to:

The Data Protection Co-ordinator
The Open University
PO Box 497
Walton Hall
Milton Keynes
MK7 6AT

The information we record is used only for the following purposes:
Processing applications.
Providing services to applicants and students. This includes sending you information about future study opportunities.
Compiling statistical information to help us to plan and improve our teaching services.
Analysing information about students for other bodies such as government departments, and producing our own statistics for publication.

## Disclosure of personal information

Personal information about you will be disclosed only in accordance with the University's registrations under the Data Protection Act. The purposes for which we hold information and the people and bodies to whom we may disclose it are listed in the Register of Data Users and Computer Bureaux. This is a public register kept by the Data Protection Registrar and you may inspect it free of charge.

To give you an example of disclosure: the University is required by the Higher Education Funding Council to give students' names and certain other personal data to the Higher Education Statistical Agency. The Agency, which is managed by the universities and colleges of higher education in the UK, in turn observes strict rules of disclosure that are registered with the Data Protection Registrar. In accordance with these rules the Agency will not give students' names to government departments or to other third parties.

## Marketing and fund-raising

We would like to tell you from time to time about other products and services offered by ourselves or our associates, such as the Visa card offered by Beneficial Bank plc or goods marketed by the Open University Students' Association. We might also want to tell you about the University's own fund-raising activities and invite you to contribute to Open University projects, or to give personal data to bodies such as research organizations to help us with our planning, promotional and fund-raising activities.

*If you do not want us to approach you for any of these purposes answer 'no' to question 22 on your reservation form, or write to us at any time.*

# Other opportunities for studying with the Open University

The *MSc in Mathematics* prospectus is one of a series of brochures describing the University's programmes of study. You can see the complete range of opportunities available to you in our introductory brochure *Studying with the Open University*. You can obtain that or any of the following programme brochures by telephoning one of the Regional Centres listed on page 27 or from:

Central Enquiry Service
PO Box 200
The Open University
Milton Keynes MK7 6YZ
Tel. 01908 653231

| Programme of study | Prospectus title | Code |
|---|---|---|
| A brief outline of all programmes | *Studying with the Open University* | SWOU |
| A brief outline of all higher degree programmes | *Higher Degree Study* | HD |
| Undergraduate-level courses in arts, languages, social sciences, mathematics, computing, science, technology, business and management; these can be taken singly or as part of a qualification | *Courses, Diplomas and BA/BSc Degrees* | CDD |
| The complete Open University Business School programme, including the Professional Certificate and Diploma and the MBA. | *Management Development* | MD |
| Postgraduate courses for professional engineers and technical managers; these can be taken individually or as part a diploma or higher degree. | *Computing for Commerce and Industry*<br>*Manufacturing: Management and Technology* | CCI<br>MMT |
| Taught MBA in Technology Management | *MBA (Technology Management)* | MBT |
| Study packs from the Centre for Modern Languages | *Modern Languages* | TML |
| Study packs, courses and a diploma for professionals in health and social welfare | *Health and Social Welfare: Educational and Training Opportunities* | HSD |
| Study packs, courses and qualifications for professionals in education | *Professional Development in Education* | PDE |
| A course for graduates who want to train as teachers | *Postgraduate Certificate in Education* | SETA |
| Taught higher degrees for those who have at least an upper second-class honours degree in the subject area | *MA in Humanities*<br>*MSc in Mathematics* | MAH<br>MSM |
| Opportunities for full-time and part-time research for those who have an upper second-class honours degree from a British university (or the equivalent) | *Research Degrees* | RD |

# Appendix 1
# Codes for completing the application form

## Table 1 Study centre and region codes

### London Region 01

| | |
|---|---|
| Acton W3 | 008 |
| Aldwych | 231 |
| Bloomsbury WC1 | 002 |
| Carshalton | 022 |
| City (Angel) EC1 | 227 |
| Cranford (Hounslow) | 016 |
| Croydon | 007 |
| Eltham SE9 | 228 |
| Hammersmith W6 | 348 |
| Harrow | 012 |
| Havering | 014 |
| Hendon NW4 | 001 |
| Kingston upon Thames | 017 |
| Marylebone NW1 | 230 |
| Mile End E1 | 020 |
| New Cross SE14 | 234 |
| Norwood SE19 | 233 |
| Orpington | 005 |
| Paddington W2 | 235 |
| Pimlico SW1 | 238 |
| Southgate N14 | 010 |
| Strand WC2 | 229 |
| Tottenham N15 | 011 |
| Twickenham | 021 |
| Wandsworth SW15 | 237 |
| West Hampstead NW3 | 226 |

### South East Region 13

| | |
|---|---|
| Addlestone | 052 |
| Ashford | 403 |
| Brighton | 004 |
| Broadstairs | 023 |
| Camberley | 032 |
| Canterbury | 006 |
| Chichester | 033 |
| Crawley | 034 |
| Dartford | 287 |
| Eastbourne | 292 |
| Ewell | 036 |
| Folkestone | 291 |
| Gillingham | 018 |
| Gravesend | 407 |
| Guildford | 038 |
| Haslemere | 405 |
| Haywards Heath | 294 |
| Horsham | 408 |
| Lewes | 416 |
| Maidstone | 288 |
| Redhill | 047 |
| Royal Tunbridge Wells | 293 |
| Sevenoaks | 409 |
| St Leonards | 013 |
| Staines | 051 |
| Tonbridge | 024 |
| Worthing | 056 |

### South Region 02

| | |
|---|---|
| Abingdon | 025 |
| Aylesbury | 026 |
| Banbury | 027 |
| Basingstoke | 028 |
| Bournemouth | 030 |
| Bracknell | 031 |
| Fareham | 305 |
| Farnborough | 037 |
| Guernsey, C.I. | 306 |
| Havant | 307 |
| High Wycombe | 040 |
| Jersey, C.I. | 303 |
| Maidenhead | 054 |
| Milton Keynes | 029 |
| Newbury | 041 |
| Newport, I.O.W. | 042 |
| Oxford | 043 |
| Poole | 044 |
| Portsmouth | 045 |
| Reading | 046 |
| Salisbury | 048 |
| Slough | 049 |
| Southampton | 050 |
| Weymouth | 053 |
| Winchester | 035 |
| Witney | 055 |

### South West Region 03

| | |
|---|---|
| Barnstaple | 057 |
| Bath | 058 |
| Bristol (Clifton) | 060 |
| Bristol (Fishponds) | 295 |
| Cheltenham | 063 |
| Chippenham | 064 |
| Exeter | 065 |
| Gloucester | 066 |
| Plymouth | 067 |
| Redruth | 068 |
| St Austell | 069 |
| Swindon | 071 |
| Taunton | 072 |
| Torquay | 073 |
| Weston-super-Mare | 074 |
| Yeovil | 075 |

### West Midlands Region 04

| | |
|---|---|
| Birmingham (Harborne) | 076 |
| Birmingham (Selly Oak) | 091 |
| Coventry | 078 |
| Dudley | 079 |
| Hereford | 080 |
| Kidderminster | 082 |
| Leamington Spa | 083 |
| Nuneaton | 084 |
| Redditch | 085 |
| Rugby | 086 |
| Shrewsbury | 087 |
| Solihull | 088 |
| Stafford | 089 |
| Stoke-on-Trent | 090 |
| Sutton Coldfield | 092 |
| Telford | 093 |
| Walsall | 094 |
| Wolverhampton | 095 |
| Worcester | 096 |

### East Midlands Region 05

| | |
|---|---|
| Boston | 097 |
| Burton-on-Trent | 098 |
| Chesterfield | 099 |
| Derby | 100 |
| Grantham | 101 |
| Grimsby | 102 |
| Heanor | 103 |
| Kettering | 104 |
| Leicester | 105 |
| Lincoln | 107 |
| Loughborough | 108 |
| Louth | 106 |
| Mansfield | 109 |
| Matlock | 114 |
| Melton Mowbray | 110 |
| Newark | 113 |
| Northampton | 111 |
| Nottingham | 112 |
| Scunthorpe | 115 |
| Stamford | 309 |
| Worksop | 116 |

### East Anglia Region 06

| | |
|---|---|
| Basildon | 285 |
| Bedford | 117 |
| Benfleet | 286 |
| Braintree | 296 |
| Bury St Edmunds | 118 |
| Cambridge | 119 |
| Chelmsford | 120 |
| Colchester | 121 |
| Cromer | 304 |
| Grays Thurrock | 122 |
| Great Yarmouth | 123 |
| Harlow | 124 |
| Hemel Hempstead | 239 |
| Hitchin | 125 |
| Huntingdon | 126 |
| Ipswich | 127 |
| Kings Lynn | 128 |
| Loughton | 129 |
| Luton | 130 |
| Norwich (Wensum Lodge) | 131 |
| Norwich (Hewett School) | 174 |
| Peterborough | 132 |
| St Albans | 133 |
| Southend | 134 |
| Stevenage | 170 |
| Watford | 135 |

### Yorkshire Region 07

| | |
|---|---|
| Barnsley | 136 |
| Bradford | 137 |
| Doncaster | 140 |
| Halifax | 141 |
| Harrogate | 142 |
| Huddersfield | 143 |
| Hull | 145 |
| Keighley | 144 |
| Leeds | 146 |
| Northallerton | 244 |
| Rotherham | 147 |
| Scarborough | 148 |
| Sheffield | 149 |
| Wakefield | 150 |
| York | 151 |

### North West Region 08

| | |
|---|---|
| Accrington | 325 |
| Altrincham | 152 |
| Ashton-under-Lyne | 153 |
| Blackpool | 157 |
| Bolton | 158 |
| Chester | 162 |
| Crewe | 163 |
| Douglas, I.O.M. | 164 |
| Lancaster | 165 |
| Liverpool | 167 |
| Macclesfield | 180 |
| Manchester (Central) | 168 |
| Manchester (Cheadle) | 327 |
| Nelson and Colne | 346 |
| Northwich | 169 |
| Oldham | 326 |
| Ormskirk | 175 |
| Preston | 171 |
| Rochdale | 172 |
| St Helens | 173 |
| Southport | 159 |
| Stockport | 176 |
| Warrington | 177 |
| Widnes | 347 |
| Wigan | 179 |
| Wirral | 155 |

### North Region 09

| | |
|---|---|
| Ashington | 181 |
| Berwick | 251 |
| Carlisle | 182 |
| Darlington | 183 |
| Durham | 184 |
| Furness (Dalton) | 154 |
| Gateshead | 185 |
| Hartlepool | 186 |
| Kendal | 324 |
| Newcastle | 187 |
| South Shields | 189 |
| Sunderland | 190 |
| Teesside (Middlesbrough) | 191 |
| Tynemouth | 193 |
| West Cumbria (Workington) | 192 |

**The Open University in Wales 10**

| | |
|---|---|
| Abergavenny | 263 |
| Aberystwyth | 194 |
| Ammanford | 260 |
| Bangor | 195 |
| Bridgend | 255 |
| Cardiff | 196 |
| Colwyn Bay | 197 |
| Connah's Quay | 299 |
| Harlech | 257 |
| Haverfordwest | 259 |
| Llandrindod Wells | 300 |
| Merthyr Tydfil | 198 |
| Newport (Gwent) | 199 |
| Newtown | 262 |
| Pontypridd | 264 |
| Swansea | 201 |
| Wrexham | 203 |

**The Open University in Scotland 11**

| | |
|---|---|
| Aberdeen | 204 |
| Arran | 689 |
| Ayr | 205 |
| Benbecula | 691 |
| Campbeltown | 692 |
| Clydebank | 268 |
| Cowal and Bute | 688 |
| Cumbernauld | 270 |
| Dornoch | 687 |
| Dumfries | 206 |
| Dundee | 207 |
| Edinburgh (Moray House) | 208 |
| Edinburgh (Napier) | 209 |
| Elgin | 274 |
| Falkirk | 211 |
| Fort William | 693 |
| Fraserburgh | 686 |
| Galashiels | 275 |
| Glasgow (Caledonian University City Campus) | 315 |
| Glasgow (Caledonian University Park Campus) | 316 |
| Glasgow (Langside) | 318 |
| Greenock | 276 |
| Hamilton | 217 |
| Inverness | 215 |
| Islay and Jura | 690 |
| Kirkcaldy | 216 |
| Kirkwall (Orkney) | 694 |
| Lerwick (Shetland) | 695 |
| Livingston | 210 |
| Newton Stewart | 696 |
| Oban | 697 |
| Paisley | 218 |
| Perth | 279 |
| Skye | 698 |
| Stirling | 219 |
| Stornoway | 699 |
| Thurso | 281 |

**The Open University in Northern Ireland 12**

| | |
|---|---|
| Armagh | 220 |
| Ballymena | 221 |
| Belfast | 223 |
| Coleraine | 282 |
| Enniskillen | 320 |
| Londonderry | 224 |
| Newtownabbey | 319 |
| Newtownards | 222 |
| Omagh | 283 |

## Study centre and region codes for study outside the United Kingdom

**Austria (Region 09)** 881

**Belgium (Region 09)**

| | |
|---|---|
| Brussels | 420 |
| Antwerp | 321 |

**Denmark (Region 09)** 891

**Finland (Region 09)** 867

**France (Region 09)**

| | |
|---|---|
| Paris | 886 |

**Germany (Region 09)**

| | |
|---|---|
| Berlin | 864 |
| Düsseldorf (Neuss) | 860 |
| Frankfurt | 858 |
| Hamburg | 865 |
| Munich | 859 |

**Gibraltar (Region 09)** 892

**Greece (Region 09)**

| | |
|---|---|
| Athens | 888 |

**Italy (Region 09)**

| | |
|---|---|
| Rome | 851 |
| Milan | 852 |

**Luxembourg (Region 09)** 422

**The Netherlands (Region 09)**

| | |
|---|---|
| The Hague | 423 |

**Portugal (Region 09)** 895

**Republic of Ireland (Region 12)**

| | |
|---|---|
| Athlone | 715 |
| Cork | 702 |
| Dublin North | 701 |
| Dublin South | 703 |
| Galway | 717 |
| Kilkenny | 716 |
| Limerick | 704 |
| Waterford | 722 |

**Slovenia (Region 09)** 899

**Spain (Region 09)**

| | |
|---|---|
| Madrid | 854 |
| Barcelona | 855 |

**Sweden (Region 09)** 897

**Switzerland (Region 09)**

| | |
|---|---|
| Geneva | 861 |
| Zürich | 862 |

## Special schemes for Forces staff and their dependants

**BFPO Cyprus (Region 07)**

| | |
|---|---|
| Akrotiri | 400 |
| Ayos Nikolaos | 401 |

**Other BFPO outside the UK (Region 04)**

| | |
|---|---|
| Germany | 421 |
| Others | 537 |

# *Table 2 Education codes*

A No formal educational qualifications
B CSE (other than grade 1), RSA or school-leaving certificate
C CSE grade 1, GCE O-level, SCE O grade, GCSE, school certificate or equivalent, BEC general certificate or diploma – in one to four subjects
I CSE grade 1, GCE O-level, SCE O grade, GCSE, school certificate or equivalent, BEC general certificate or diploma – in five or more subjects
D GCE A-level, SCE H grade, higher school certificate or equivalent – in one subject
V GCE A-level, SCE H grade, higher school certificate or equivalent – in two or more subjects
E ONC/OND, BEC, BTEC, SCOTBEC and SCOTVEC national certificates and diplomas, TEC and SCOTEC certificates and diplomas
F HNC/HND, BEC, BTEC, SCOTBEC and SCOTVEC higher national certificates and diplomas, TEC and SCOTEC higher certificates and diplomas
G Teacher's certificates or equivalent
H University diploma or equivalent based on at least one year's full-time study (includes diploma in higher education)

**First degree**

J1 Overseas
J2 Pass/ordinary
J3 Third class
J4 Lower second class
J5 Second class undivided
J6 Upper second class
J7 First class
JN Other (please specify)

**Higher degree (not postgraduate diploma or PGCE)**

K1 Master's
K2 Doctorate
KN Other (please specify)

L Professional qualification below A-level equivalent
M Professional qualification: A-level equivalent but not degree-level
N Professional qualification: degree equivalent or above

# Table 3 Ethnic origin codes

### Asian codes

E Asian – British
C Bangladeshi
D Chinese
A Indian
B Pakistani
F Asian – other

### White codes

L White – British
N White – other European
P White – other

### Black codes

J Black – British
H Black – African
G Black – Caribbean
K Black – other

### Others

R Any other ethnic group

# Table 4 Occupation codes

What is your job? If you are not in paid work, what was your last paid job? Choose one code and write it in the box.

A *Corporate managers and administrators* General managers and administrators in national and local government, large companies and organizations, education, trade unions, professional bodies and charities. Production managers in manufacturing, construction, mining and energy industries. Sales, O and M, personnel, computer systems, bank managers. Company secretaries and financial managers. Civil Service executive officers. Transport and warehouse managers. Officers in armed forces. Police inspectors and equivalent ranks in the fire, prison and customs and excise services.

B *Managers/proprietors in agriculture and services* Owners and managers in farming, horticulture, forestry and fishing. Managers and proprietors of shops, garages, hotels, pubs, cinemas.

C *Science and engineering professionals* Scientists, engineers and technologists holding a degree or equivalent qualification.

D *Science and engineering associate professionals* Laboratory, engineering, electrical, architectural, building and other scientific technicians. Draughtspersons, building inspectors. Quantity, marine and insurance surveyors. Computer analysts and programmers.

E *Health professionals* Doctors, dentists, pharmacists, ophthalmic opticians, vets.

F *Health associate professionals* Nurses, midwives, radiographers, physiotherapists, chiropodists, dispensing opticians, medical technicians, dental auxiliaries. Psychotherapists, occupational, speech and other therapists. Environmental health officers.

G *Teaching professionals in schools* Teaching professionals in special, nursery, primary and secondary schools.

H *Teaching professionals in further and higher education* Lecturers in colleges, polytechnics, universities.

I *Other teaching professionals* Education officers and school inspectors. Private teachers. Teachers of non-academic subjects at evening classes.

J *Other professionals* Judges, barristers, solicitors. Chartered and certified accountants. Actuaries, economists, statisticians. Management consultants. Architects, town planners. Building, land, mine and 'general practice' surveyors. Librarians, curators. Social scientists, clergy, social workers, probation officers.

K *Other associate professionals* Barrister's clerks, conveyancers, legal executives. Valuers, underwriters, stockbrokers, taxation experts, personnel officers, O and M officers. Houseparents, welfare, community and youth workers. Writers, artists, designers, actors, directors, musicians, photographers. Athletes and sports officials. Information officers, vocational trainers, careers advisers, driving instructors. Safety officers. Inspectors of factories and other statutory inspectors. Ship and aircraft officers. Air traffic planners and controllers.

L *Clerical occupations* Civil Service administrative officers and assistants. Local government clerical officers and assistants. Numerical clerks and cashiers. Filing and general clerks. Stores and despatch clerks, storekeepers. Computer operators. Office machine operators. Tracers, drawing office assistants.

M *Secretarial occupations* Secretaries, personal assistants, typists, word-processor operators. Receptionists, telephonists, telephone, radio and telegraph operators.

N *Skilled construction trades* Skilled workers in the construction trades, e.g. bricklayers, glaziers, painters, decorators, scaffolders, carpet fitters.

O *Skilled engineering trades* Skilled workers in the following trades: metal machining, fitting, instrument-making, e.g. lathe-setter, tool-maker; electrical/electronic e.g. electricians, telephone fitters, computer engineers.

P *Other skilled trades* Skilled workers in the following trades: metal forming, welding, e.g. plumbers, welders, riveters; vehicle, e.g. motor mechanics, panel beaters, tyre fitters; textile, e.g. weavers, tailors, shoe repairers; printing, e.g. compositors, printers, book-binders; wood-working, e.g. carpenters, joiners, pattern-makers; food preparation, e.g. bakers, butchers, fishmongers; other crafts and skilled trades, e.g. dental technicians, gardeners, office machinery mechanics, face-trained coalminers.

Q *Security and protection occupations* NCOs and other ranks in armed forces. Police officers (sergeant and below). Equivalent ranks in the fire, prison and customs and excise services. Traffic wardens, security guards.

R *Personal service occupations* Chefs, waiters, bar staff. Travel attendants. Assistant nurses, ambulance staff, dental nurses. Nursery nurses, playgroup leaders, educational assistants. Hairdressers, beauticians. Housekeepers, caretakers, drycleaners.

S *Buyers, brokers and sales representatives* Buyers, purchasing officers, importers and exporters, air commodity and ship brokers, sales representatives, auctioneers, demonstrators, insurance agents.

T *Other sales occupations* Sales assistants, check-out operators, forecourt attendants, door-to-door salespersons, market traders.

U *Industrial plant and machine operators, assemblers* Workers operating plant or machines in the processing of food, drink, textiles, chemicals, paper, plastics, metal etc. Assemblers, lineworkers, inspectors, packers.

V *Drivers and mobile machine operators* Lorry, crane, taxi drivers. Train drivers, inspectors, guards. Bus drivers, conductors, inspectors.

W *Other occupations in agriculture, forestry and fishing* Farm workers, shepherds, tractor drivers, stablehands. Fishermen/women. Forestry workers, lumberjacks.

X *Other occupations* Labourers. Fitter's mates. Road construction workers. Dockers. Postal workers. Messengers. Kitchen porters. Window cleaners. Car-park attendants.

Y Never had a paid job

# Appendix 2
# Open University addresses

## UK Regional Centres

### London Region 01

The Open University
London Region
Parsifal College
527 Finchley Road
Hampstead
LONDON NW3 7BG
Tel. 0171 433 6161

**Area covered**

Greater London

### South East Region 13

The Open University
South East Region
St James's House
150 London Road
EAST GRINSTEAD RH 19 1ES
Tel. 01342 410545

**Area covered**

Kent, Surrey, East Sussex, West Sussex

### South Region 02

The Open University
South Region
Foxcombe Hall
Boars Hill
OXFORD OX1 5HR
Tel. 01865 328038

**Area covered**

Berkshire, Buckinghamshire, Channel Islands, Dorset, Hampshire, Isle of Wight, Oxfordshire, part of Wiltshire

### South West Region 03

The Open University
South West Region
4 Portwall Lane
BRISTOL BS1 6ND
Tel. 0117 925 6523

**Area covered**

Avon, Cornwall, Devon, Gloucestershire, Somerset, Scilly Isles, most of Wiltshire

### West Midlands Region 04

The Open University
West Midlands Region
66–68 High Street
Harborne
BIRMINGHAM B17 9NB
Tel. 0121 428 1550

**Area covered**

Hereford and Worcester, Shropshire, most of Staffordshire, Warwickshire, West Midlands

### East Midlands Region 05

The Open University
East Midlands Region
The Octagon
143 Derby Road
NOTTINGHAM NG7 1PH
Tel. 0115 947 3072

**Area covered**

Most of Derbyshire, Leicestershire, Lincolnshire, Northamptonshire, Nottinghamshire, South Humberside, part of Staffordshire (Burton-on-Trent area)

### East Anglia Region 06

The Open University
East Anglia Region
Cintra House
12 Hills Road
CAMBRIDGE CB2 1PF
Tel. 01223 61650

**Area covered**

Bedfordshire, Cambridgeshire, Essex, Hertfordshire, Norfolk, Suffolk

### Yorkshire Region 07

The Open University
Yorkshire Region
2 Trevelyan Square
Boar Lane
Leeds LS1 6ED
Tel. 0113 244 4431

**Area covered**

North Humberside, North Yorkshire, South Yorkshire, West Yorkshire

### North West Region 08

The Open University
North West Region
Chorlton House
70 Manchester Road
Chorlton-cum-Hardy
MANCHESTER M21 9UN
Tel. 0161 956 6824

**Area covered**

Cheshire, part of Derbyshire, Isle of Man, Lancashire, Greater Manchester, Merseyside

### North Region 09

The Open University
North Region
Eldon House
Regent Centre
Gosforth
NEWCASTLE UPON TYNE
NE3 3PW
Tel. 0191 284 1611

**Area covered**

Cleveland, Cumbria, Durham, Northumberland, Tyne and Wear

### Resource Centres

Penrith
Tel. 01768 63791
Middlesbrough
Tel. 01642 816227

### The Open University in Wales 10

The Open University in Wales
24 Cathedral Road
CARDIFF CF1 9SA
Tel. 01222 665636

**Area covered**

Wales

### The Open University in Scotland 11

The Open University in Scotland
10 Drumsheugh Gardens
EDINBURGH EH3 7QJ
Tel. 0131 225 2889

**Area covered**

Scotland

### The Open University in Northern Ireland 12

The Open University in Northern Ireland
40 University Road
BELFAST BT7 1SU
Tel. 01232 245025

**Area covered**

Ireland

# Central Offices

### General enquiries

Central Enquiry Service
PO Box 200
The Open University
Walton Hall
Milton Keynes MK7 6YZ
Tel. 01908 653231

### MSc in Mathematics applications

Taught Higher Degrees Section
Higher Degrees Office
PO Box 49
The Open University
Walton Hall
Milton Keynes MK7 6AD
Tel. 01908 653043

# Outside the United Kingdom

Some countries have resident Open University Co-ordinators who can provide further information.

### Republic of Ireland

The Open University
Enquiry and Advice Centre
Holbrook House
Holles Street
Dublin 2
Tel. (01) 678 5399

### Belgium

Open University Co-ordinator
Tel. (02) 644 3372/3
Fax (02) 644 3368

### France

Open University Co-ordinator
Tel. (1) 47 58 53 73
Fax (1) 47 58 55 25

### Germany (North)

Open University Co-ordinator
Tel. 02102 87 1814
Fax 02102 87 1864

### Germany (South)

Open University Co-ordinator
Tel. 081 39 7373
Fax 081 39 7365

### Greece

Open University Co-ordinator
Tel. and fax (01) 364 7335

### Italy

Open University Co-ordinator
Tel. and fax 02 813 8048

### Luxembourg

Open University Co-ordinator
Tel. 32 91 14
Fax 32 56 50

### Netherlands

Open University Co-ordinator
Tel. and fax 070 322 2335

### Portugal

Open University Co-ordinator
Tel. 01 347 6141
Fax 01 347 6152

### Spain

Open University Co-ordinator
Tel. (91) 577 7701
Fax (91) 435 8635

### Switzerland

Open University Co-ordinator
Tel. and fax 022 788 6473

### Enquiries from other countries

Enquiries from residents *in other European Union countries, Gibraltar and Slovenia* should be addressed to:

The Open University
Eldon House
Regent Centre
Gosforth
NEWCASTLE UPON TYNE
NE3 3PW
Tel. +44 191 284 1611
Fax +44 191 284 6592
E-mail R09@open.ac.uk

Enquiries from *BFPO addresses outside the UK (except Cyprus)* should be addressed to Region 04 West Midlands (see above).

Enquiries from *BFPO addresses in Cyprus* should be addressed to Region 07 Yorkshire (see above).

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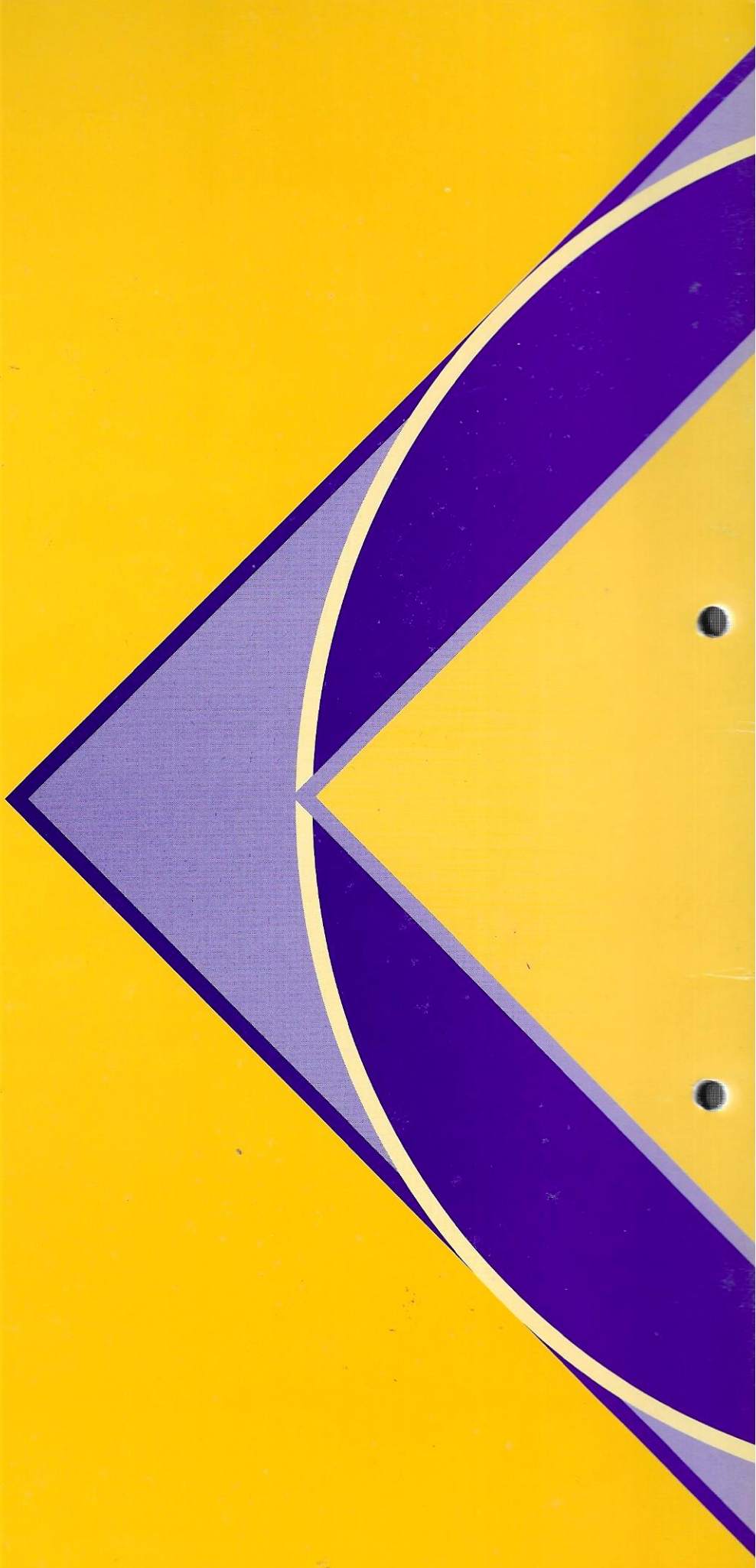

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